

Appln. No. 10/602,288
Amendment
Reply to Final Office Action dated March 18, 2005

Docket No. 200-80

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A clearance free hinge for an automotive vehicle seat comprising in combination:

a first hinge arm and a second hinge arm, each hinge arm having a bore, the bore of the first hinge arm comprising a retaining zone and a compensation zone located one behind the other, the compensation zone having greater radial inner dimensions than the retaining zone and the compensation zone being defined by an inner lining and a step, which step is oriented substantially in a radial direction and is contiguous to the retaining zone;

a hinge pin extending through said bores; and

a shim member that rests against the inner lining, the step and the hinge pin which shim member, during assembly of the hinge, is pushed axially toward the step whereby the shim member deforms and fills out any space between hinge pin, step and inner lining.

wherein in the assembled state the retaining zone closely surrounds the hinge pin with a clearance within manufacturing tolerances, the compensation zone selectively receives the shim member and the shim member is supported by the step and does not protrude into the retaining zone.

2. (Currently amended) The clearance free hinge of claim 1, wherein the inner lining is defined by a cone having an aperture angle between 0 and 90 degrees and the step forms an angle with the inner lining which angle is between 90 and 135 degrees.

3. (Original) The clearance free hinge of claim 1, wherein, before assembly of the hinge, the shim member has an axial length which axial length is greater than the distance between the step and an outer surface of the first hinge arm which outer surface defines an end of the compensation zone.

(WP241986.1)

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4. (Original) The clearance free hinge of claim 1, wherein the hinge pin has a radial shoulder resting either on an inner surface of the first hinge arm or on an inner surface of the second hinge arm located directly opposite the inner surface of the first hinge arm.

5. (Original) The clearance free hinge of claim 1, wherein the shim member is made from a mechanically deformable plastic material.

6. (Original) The clearance free hinge of claim 1, wherein the retaining zone is dimensioned so as to be capable of taking a maximum radial tensile load which acts between the first hinge arm and the hinge pin and for which the hinge is designed.

7. (Currently amended) The clearance free hinge of claim 1, wherein the hinge arms are made from sheet metal and the compensation zone has an axial length that is not smaller than 50 % of the axial length of the bore of the first hinge arm.

8. (Original) The clearance free hinge of claim 1, wherein the shim member has a front portion, and wherein prior to assembling the hinge, the shim member has an initial shape, the front portion of the shim member being insertable into the retaining zone and after assembly the shim member having a final shape in which it is plastically deformed relative to the initial shape.

9. (Currently amended) The clearance free hinge of claim 1, wherein the inner lining is defined by a cone having an aperture angle between 10 and 45 degrees and the step forms an angle with the inner lining between 95 and 111.5 degrees.

10. (Original) The clearance free hinge of claim 1, wherein before, and also after assembly of the hinge, the shim member has a greater axial length than the distance between the step and an outer surface of the first hinge arm which outer surface defines an end of the compensation zone.

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11. (Original) The clearance free hinge of claim 1, wherein the shim member is made from LDPE.

12. (Currently amended) A clearance free hinge for an automotive vehicle seat comprising in combination

a first hinge arm and a second hinge arm, each hinge arm having a bore, the bore of the first hinge arm comprising a retaining zone and a compensation zone located one behind the other, the compensation zone having greater radial inner dimensions than the retaining zone and the compensation zone being defined by an inner lining and a step, which step is oriented substantially in a radial direction and is contiguous to the retaining zone,

a hinge pin extending through said bores, and

a shim member that rests against the inner lining, the step and the hinge pin which shim member, during assembly of the hinge, is pushed axially toward the step whereby the shim member deforms, fills out any space between hinge pin, step and inner lining and avoids any radial play between the first hinge arm and the hinge pin,

wherein in the assembled state the retaining zone closely surrounds the hinge pin with a clearance within manufacturing tolerances, the compensation zone selectively receives the shim member and the shim member is supported by the step.

13. (Currently amended) A clearance free hinge for an automotive vehicle seat comprising in combination

a first hinge arm and a second hinge arm, each hinge arm having a bore, the bore of the first hinge arm comprising a retaining zone and a compensation zone located one behind the other, the compensation zone having greater radial inner dimensions than the retaining zone and the compensation zone being defined by an inner lining and a step, which step delimits the compensation zone towards the retaining zone and is oriented substantially in a radial direction and is contiguous to the retaining zone,

a hinge pin extending through said bores, and

a shim member that rests against the inner lining, the step and the hinge pin which shim

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member, during assembly of the hinge, is pushed axially toward the step and comes to rest against the step, and is supported by the step during further axial insertion, whereby defined conditions for the deformation of the shim member are obtained and whereby the deformed shim member deforms, and fills out any space between hinge pin, step and inner lining and avoids radial play between the first hinge arm and the hinge pin.

14. (Previously presented) A clearance free hinge for an automotive vehicle seat comprising in combination

a first hinge arm and a second hinge arm, each hinge arm having a bore, the bore of the first hinge arm comprising a retaining zone and a compensation zone located one behind the other, the compensation zone having greater radial inner dimensions than the retaining zone and the compensation zone being defined by an inner lining and a step, which step is oriented substantially in a radial direction and is contiguous to the retaining zone,

a hinge pin extending through said bores, and

a shim member that rests against the inner lining, the step and the hinge pin which shim member, during assembly of the hinge, is pushed axially toward the step whereby the shim member deforms, fills out any space between hinge pin, step and inner lining and does not reach the retaining zone.

15. (New) A clearance free hinge for an automotive vehicle seat comprising in combination a first hinge arm and a second hinge arm, each hinge arm having a bore, the bore of the first hinge arm comprising a retaining zone and a compensation zone located one behind the other, the compensation zone having greater radial inner dimensions than the retaining zone and the compensation zone being defined by an inner lining and a step, which step delimits the compensation zone towards the retaining zone and is oriented substantially in a radial direction and is contiguous to the retaining zone,

a hinge pin extending through said bores, and

a shim member that rests against the inner lining, the step and the hinge pin which shim member, during assembly of the hinge, is pushed axially toward the step and comes to rest against the step, and, during further axial insertion, is supported by the step, whereby it expands radially

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outward, and whereby the deformed shim member fills out any space between hinge pin, step and inner lining and avoids radial play between the first hinge arm and the hinge pin.